Remarks:

Applicant appreciatively acknowledges the Examiner's confirmation of receipt of Applicant's claim for priority and certified priority document under 35 U.S.C. § 119(a)-(d).

Reconsideration of the application is respectfully requested.

Claims 26 - 50 are presently pending in the application. Claims 1 - 25 were previously canceled. As it is believed that the claims were patentable over the cited art in their previously presented form, the claims have not been amended to overcome the references.

Applicant gratefully acknowledges that item 3 of the above-identified Office Action indicated that claims 48 - 49 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In item 2 of the Office Action, claims 26 - 47 and 50 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U. S. Patent Application Publication No. 2002/0171433 to Watanabe et al ("**WATANABE**").

Applicant respectfully traverses the above rejections.

More particularly, claim 26 recites, among other limitations:

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> correcting the output signal from the measuring circuit into correct measured value **in a correction element** **having a transfer function** **being inverse to a** **transfer function** **of the measuring circuit**, the correction element being an electronic filter; and
>
> **adjusting the transfer function of the electronic filter to match the transfer function of the measuring circuit**. [emphasis added by Applicant]

Similarly, Applicant's claim 36 recites, among other limitations:

> an electronic filter functioning as a correction element and having an output side connected to said measuring circuit, said correction element receiving the output signal from said measuring circuit and outputting a corrected measured value, **said correction element having a transfer function being inverse to a transfer function of said measuring circuit**, and **it being possible for the transfer function of said correction element to be adjusted to match it to the transfer function of said measuring circuit**. [emphasis added by Applicant]

As such, among other limitations, Applicant's claims require **a correction element having a transfer function that is inverse to a transfer function of a measuring circuit, wherein the transfer function of an electronic filter acting as a correction element is adjusted to match the transfer function of the measuring circuit.** Applicant respectfully **disagrees** that the above-discussed features of Applicant's claims are taught or suggested by **WATANABE.**

More particularly, **a transfer function is a mathematical function that describes an output signal in dependence upon an input signal**. This can be seen, for example, by the definition of a "transfer function", as found on page T-16 of the Federal Standard 1037C (http://www.its.bldrdoc.gov/fs-1037/dir-037/_5542.htm), stating:

> **transfer function**: 1. **A mathematical statement that describes the transfer characteristics of a system, subsystem, or equipment. 2. The relationship between the input and the output of a system, subsystem, or equipment in terms of the transfer characteristics.** *Note 1:* When the transfer function operates on the input, the output is obtained. Given any two of these three entities, the third can be obtained. *Note 2:* Examples of simple transfer functions are voltage gains, reflection coefficients, transmission coefficients, and efficiency ratios. An example of a complex transfer function is envelope delay distortion. *Note 3:* For a negative feedback circuit, the transfer function, T , is given by
>
> $$T = \frac{e_0}{e_i} = \frac{G}{1 + GH} ,$$
>
> where e_o is the output, e_i is the input, G is the forward gain, and H is the backward gain, *i.e.,* the fraction of the output that is fed back and combined with the input in a subtracter. 3 . Of an optical fiber, the complex mathematical function that expresses the ratio of the variation, as a function of modulation frequency, of the instantaneous power of the optical signal at the output of the fiber, to the instantaneous power of the optical signal that is launched into the fiber. *Note:* The optical detectors used in communication applications are square-law devices. Their output current is proportional to the input optical power. Because electrical power is proportional to current, when the optical power input drops by one-half (3 dB), the electrical power at the output of the detector drops by three-quarters (6 dB). [FAA] [emphasis added by Applicant]

Thus, the Federal Standard 1037C (FED-STD-1037C) Glossary of Telecommunications Terms defines a "**transfer function**" as **a mathematical statement** that describes the transfer characteristics of a system, subsystem, or equipment; and **the relationship between the input and the output of a system, subsystem, or equipment in terms of the transfer characteristics**. Applicant notes that page viii of FED-STD-1037C, paragraph 3(a) states, in part, "[a]ll Federal departments and agencies **shall** use the terms and definitions contained herein." [emphasis added by Applicant]. Copies of pages vii, viii and T-16 of the FED-STD-1037C are included herewith, for convenience.

As such, a transfer function represents a mathematical function. This can also be seen from the specification of the instant application, for example, on page 9 of the instant application, line 33 - page 10, line 31, wherein the transfer functions of the present invention are defined as specific mathematical functions.

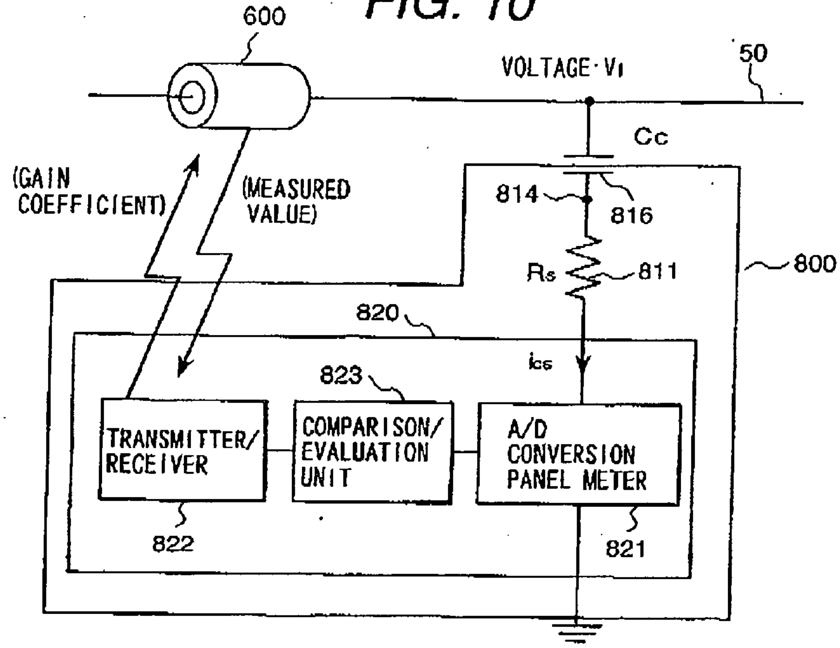
However, in rejecting Applicant's independent claims, pages 2 - 3 of the Office Action alleged that the transmitter/receiver devices 610 and 822 of Figs. 7 and 10 of **WATANABE** disclose the transfer function of Applicant's claimed invention. Applicant respectfully disagrees.

More particularly, the transmitting devices (transmitter/receiver) illustrated there, however, clearly represent **devices for transmitting data**, for example, via a radio transmission, and are not, and cannot themselves be, a **mathematical <u>transfer functions</u>**, in the manner implied on page 3 of the Office Action. Consequently, the measuring apparatus 600 of **WATANABE** (pointed to on page 2 of the Office Action) does not correspond to the "**measuring circuit**" of Applicant's claims.

Rather, in **WATANABE**, an effective voltage value is determined by means of the measuring apparatus 600 of **WATANABE** (see Fig. 7 of **WATANABE**), which measuring apparatus includes a current voltage converting means (100 of **WATANABE**) and a further-processing device (a voltage value calculating means, not illustrated in **WATANABE**). See, for example, paragraphs [0057] and [0090] of **WATANABE**. **WATANABE** discloses calibrating the voltage measuring device at an installation site , in order to minimize deviations of the measured voltage values. See, for example, paragraph [0100] of **WATANABE**. More particularly, **WATANABE** discloses using a calibrator 800 to calibrate the gain gain coefficient circuit 654 of **WATANABE**, in the microcomputer 650 of **WATANABE**. This calibration procedure is described in connection with Figs. 10 and 11 of **WATANABE**, for

example, in paragraph [0101] of **WATANABE**. Fig. 10 of **WATANABE** is being reproduced herebelow, for convenience.

FIG. 10



It can be seen from Fig. 10 of **WATANABE**, that the measuring apparatus 600 transmits a "**measured value**" for the voltage to the calibrator 800, by way of its radio transmitter/receiver. The calibrator 800 of **WATANABE** receives the measured voltage value with the transmitter/receiver 822. Simultaneously in **WATANABE**, the calibrator 800 of **WATANABE** determines **its own measured voltage value**, using the coupling capacitance 816 and the high quality high-resistance resistor 811. The voltage value measured by the calibrator 800 is compared with the voltage value measured the voltage measuring apparatus 600 of

WATANABE, using the comparison evaluation unit 823 of the calibrator 800 of **WATANABE**. As a result of this comparison, the calibrator 800 of **WATANABE** sends a gain coefficient to the voltage measuring apparatus 600 of **WATANABE** (i.e., to the gain filter 654 of **WATANABE**), to ensure agreement between them. See, for example, paragraph [0102] of **WATANABE**. Since **WATANABE** presumes that the correction apparatus 800 of **WATANABE** operates more precisely than the measuring apparatus 600 of **WATANABE**, the measuring apparatus 600 of **WATANABE** can be calibrated in this manner. See, for example, paragraph [0103] of **WATANABE**.

Contrary to the teachings of **WATANABE**, Applicant's claimed invention requires, among other things, **a correction element, having <u>a transfer function</u> that is the inverse of <u>a transfer function</u> of the measuring circuit**. More particularly, in Applicant's claimed invention, adapting the transfer function of an electronic filter permits the correction elements to be entirely adapted to transfer function of the measuring circuit. See, for example, Applicant's claim 26 ("adjusting the transfer function of the electronic filter to match the transfer function of the measuring circuit") and Applicant's claim 36 ("an electronic filter functioning as a correction element . . . having a transfer function being inverse to a transfer function of said measuring circuit, and it being

possible for the transfer function of said correction element to be adjusted to match it to the transfer function of said measuring circuit").

Thus, Applicant's claimed invention requires, among other limitations of Applicants' claims, correction of the measured voltage values using a transfer function that is the inverse of a transfer function of the measuring circuit. In contrast to Applicant's claimed usage of inverse transfer functions to provide a correction, **WATANABE** discloses the use of **a calibration <u>measurement</u>**. Such a calibration **<u>measurement</u>** and resultant gain coefficient are **<u>not</u>** a "**<u>transfer function</u>**" (i.e., **a mathematical <u>function</u>** that describes an output signal in dependence upon an input signal), as required by Applicant's claims. Rather, as discussed above, **WATANABE** makes a comparison between a voltage measured by the voltage measuring apparatus 600 of **WATANABE** and a voltage measured by the calibration device 800 of **WATANABE** to provide a gain coefficient for correcting the values measured by the voltage measuring apparatus 600 of **WATANABE**.

From the foregoing, it can be seen that the **WATANABE** reference fails to teach or suggest, among other limitations of Applicants' claims, a correction element having **a <u>transfer function</u> that is inverse to a <u>transfer function</u>** of a measuring

circuit, **wherein the transfer function of an electronic filter acting as a correction element is adjusted to match the transfer function of the measuring circuit.**

For the foregoing reasons, among others, Applicant's claims are believed to be patentable over the **WATANABE** reference. It is accordingly believed that none of the references, whether taken alone or in any combination, teach or suggest the features of claims 26 and 36. Claims 26 and 36 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 26 or 36.

Finally, Applicant appreciatively acknowledges the Examiner's statement that claims 48 - 49 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." In light of the above, Applicant respectfully believes that rewriting of claims 48 - 49 is unnecessary at this time.

In view of the foregoing, reconsideration and allowance of claims 26 - 50 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a

telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made.

Please charge any fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Stemer LLP, No. 12-1099.

Respectfully submitted,

For Applicant

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April 15, 2008

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FEDERAL STANDARD 1037C

Superseding FEDERAL STANDARD 1037B, 03 June 1991

TELECOMMUNICATIONS: GLOSSARY OF TELECOMMUNICATION TERMS

CONTENTS

transcoding: The direct digital-to-digital conversion from one encoding scheme, such as voice LPC-10, to a different encoding scheme without returning the signals to analog form. (188) *Note:* The transcoded signals, *i.e.*, the digital representations of analog signals may be any digital representation of any analog signal, such as voice, facsimile, or quasi-analog signals.

transducer: A device for converting energy from one form to another for the purpose of measurement of a physical quantity or for information transfer.

TRANSEC: *Abbreviation for* **transmission security.** *See* **communications security.**

transfer: To send information from one location and to receive it at another.

transfer characteristics: Those intrinsic parameters of a system, subsystem, or equipment which, when applied to the input of the system, subsystem, or equipment, will fully describe its output.

transfer function: 1. A mathematical statement that describes the transfer characteristics of a system, subsystem, or equipment. 2. The relationship between the input and the output of a system, subsystem, or equipment in terms of the transfer characteristics. *Note 1:* When the transfer function operates on the input, the output is obtained. Given any two of these three entities, the third can be obtained. *Note 2:* Examples of simple transfer functions are voltage gains, reflection coefficients, transmission coefficients, and efficiency ratios. An example of a complex transfer function is envelope delay distortion. *Note 3:* For a negative feedback circuit, the transfer function, T, is given by

$$T = \frac{e_0}{e_i} = \frac{G}{1 + GH} \quad ,$$

where e_0 is the output, e_i is the input, G is the forward gain, and H is the backward gain, *i.e.*, the fraction of the output that is fed back and combined with the input in a subtracter. 3. Of an optical fiber, the complex mathematical function that expresses the ratio of the variation, as a function of modulation frequency, of the instantaneous power of the optical signal at the output of the fiber, to the instantaneous power of the optical signal that is launched into the fiber. *Note:* The optical detectors used in communication applications are square-law devices. Their output current is proportional to the input optical power. Because electrical power is proportional to current, when the optical power input drops by one-half (3 dB), the electrical power at the output of the detector drops by three-quarters (6 dB). [FAA]

transfer mode: In an integrated services digital network, (ISDN), a method of transmitting, multiplexing, and switching.

transfer rate: *See* **data transfer rate.**

transient: *See* **dynamic variation.**

transit delay: Between two given points in an integrated services digital network (ISDN), the time between the moment that the first bit of a data unit, such as a frame or block, passes the first given point and the moment that bit passes the second given point, plus the transmission time of the data unit.

transition: In a signal, the changing from one significant condition to another. *Note:* Examples of transitions are the changing from one voltage level to another in a data stream, the shifting from one phase position to another in phase-shift keying, and the translation from one frequency to another in frequency-shift keying. [From Weik '89]

transition frequency: The frequency associated with the difference between two discrete energy levels in an atomic system, given by

$$f_{2,1} = \frac{E_2 - E_1}{\hbar} \quad ,$$

where $f_{2,1}$ is the frequency associated with the difference between two energy levels, E_2 and E_1 ($E_2 > E_1$), and $\hbar$ is Planck's constant. *Note:* If a transition from E_2 to E_1 occurs, a photon with frequency $f_{2,1}$ is likely to be emitted. If the atomic system is at energy level E_1, and a photon of frequency $f_{2,1}$ is absorbed, the energy level will be raised to E_2. [From Weik '89]

transition zone: *Synonym* **intermediate-field region.**

FEDERAL STANDARD

Telecommunications: GLOSSARY OF TELECOMMUNICATION TERMS

1. SCOPE.

a. This glossary provides standard definitions for the fields subsumed by the umbrella discipline of telecommunications. Fields defined herein include: antenna types and measurements, codes/coding schemes, computer and data communications (computer graphics vocabulary, file transfer techniques, hardware, software), fiber optics communication, facsimile types and techniques, frequency topics (frequency modulation, interference, spectrum sharing), Internet, ISDN, LANs (MANs, WANs), modems, modulation schemes, multiplexing techniques, networking (network management, architecture/topology), NII, NS/EP, power issues, PCS/UPT/cellular mobile, radio communications, routing schemes, satellite communications, security issues, switching techniques, synchronization/timing techniques, telegraphy, telephony, TV (UHF, VHF, cable TV, HDTV), traffic issues, transmission/propagation concerns (signal loss/attenuation, transmission lines), video technology, and wave propagation/measurement terminology.

b. The terms and accompanying definitions contained in this standard are drawn from authoritative non-Government sources such as the International Telecommunication Union, the International Organization for Standardization, the Telecommunications Industry Association, and the American National Standards Institute, as well as from numerous authoritative U.S. Government publications. The FTSC Subcommittee to Revise FED-STD-1037B has rewritten many definitions as deemed necessary either to reflect technology advances or to make those definitions that were phrased in specialized terminology more understandable to a broader audience.

1.1 **Applicability.** This standard incorporates and supersedes FED-STD-1037B, June 1991. Accordingly, all Federal departments and agencies shall use it as the authoritative source of definitions for terms used in the preparation of all telecommunications documentation. The use of this standard by all Federal departments and agencies is ***mandatory.***

1.2 **Purpose.** The purpose of this standard is to improve the Federal acquisition process by providing Federal departments and agencies a comprehensive, authoritative source of definitions of terms used in telecommunications and directly related disciplines by national, international, and U.S. Government telecommunications specialists.

2. REQUIREMENTS AND APPLICABLE DOCUMENTS.

a. The terms and definitions that constitute this standard, and that are to be applied to the uses cited in paragraph 3 below, are contained on page A-1 through Z-1 of this document. There are no other documents applicable to implementation of this standard. A list of acronyms and abbreviations is presented as Appendix A. The list of abbreviations and acronyms uses **bold** font to

identify those term names that are defined in this glossary. An abbreviated index of selected principal families of related term names is presented in Appendix B.

b. Within this document, symbols for units of measurement (and the font type for these symbols) are in accord with ANSI/IEEE Std. 260.1-1993, *American National Standard Letter Symbols for Units of Measurement (SI Units, Customary Inch-Pound Units, and Certain Other Units).*

3. USE.

a. All Federal departments and agencies shall use the terms and definitions contained herein. Only after determining that a term or definition is not included in this document may other sources be used. The *Legend* beginning on page *xii* is provided to assist users in determining the documentary source of the definitions. *

b. Nearly all terms are listed alphabetically; a few exceptions to this rule include (1) the family of network topologies, which are grouped under the definition of "*network topology*," and (2) the family of dispersion terms, which are grouped under the definition of "*dispersion*." In all cases, ample cross references guide the reader to the location of the definition. Term names containing numerals are alphabetized as though the numbers were spelled out; thus, *"144-line weighting"* will appear in the "O" portion of the alphabet between the terms *"on-board communication station"* and *"one-way communication,"* since it is pronounced as if it were spelled "one-forty-four line. . . ." For user convenience, exceptions to the rule are taken for entries comprising numerically consecutive terms, *e.g.*, *"digital signal 0," . . . "digital signal 4,"* which are grouped numerically following the *"digital signal"* entry.

c. An abbreviation for the term name often appears in parentheses following the term name. When both the abbreviation and the spelled-out version of a term name are commonly used to name an entity defined in this glossary, the definition resides with the more commonly used version of the term name. If the more commonly used designation is the fully spelled-out term name, then the definition resides under that name. If, however, the more common term name is the abbreviation, then the definition rests with the abbreviated spelling of that term name. For example, the definition of *"decibel"* resides under *"dB."*

d. When more than one definition is supplied for a given term name, the definitions are numbered, and the general definition is given first. Succeeding definitions are often specific to a specialized discipline, and are usually so identified.

e. Notes on definitions are **not** a mandatory part of this document; these notes are expository or tutorial in nature. When a note *follows* a source citation (such as "[JP1]"), that note is not part of the source document cited. Notes and cross references apply only to the immediately preceding definition, unless stated otherwise.